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13. ABSTRACT *(Maximum 200 words)*

This brief report summarizes a study conducted jointly by the Walter Reed Army Institute of Research (WRAIR) and the U.S. Army Medical Research Unit - Europe on stress-related symptoms among soldiers who deployed for Operation Desert Shield/Storm (ODS/S). Research methods include a survey conducted in November and December 1991, nine to ten months after the Gulf War, with 3,720 soldiers (Private to Staff Sergeant) and 544 leaders (Sergeant First Class to Lieutenant Colonel). Participants were asked about their combat experiences and current levels of symptoms and adjustment. Stress response was measured by the Impact of Event Scale and the Brief Symptom Inventory. Respondents were not assessed for PTSD, but they were asked about symptoms typically associated with the disorder. Results indicate that the majority of respondents report some PTS-related symptoms over the previous week: 69% report at least one intrusive symptom; 37% report at least three avoidance symptoms; and 46% report at least two arousal symptoms. Symptom risk was associated with exposure to dead or wounded casualties, particularly to U.S. casualties. The report concludes that soldiers of all ranks, especially leaders, should be aware that PTS symptoms are common following a wartime deployment.

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Research Report

15 February 1994

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Headquarters 7th Medical Command, Unit 29218, APO AE 09102
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Post Traumatic Stress Symptoms in U.S. Veterans of the Gulf War

Deployment and combat expose soldiers to various extreme physical, psychological, and social stressors that can have a profound impact on psychological well-being. Besides the stress experienced during a deployment itself, soldiers may feel the effects of such stressors many months later. A study conducted jointly by the Walter Reed Army Institute of Research (WRAIR) and the U.S. Army Medical Research Unit-Europe examined stress-related symptoms among soldiers who had deployed for Operation Desert Shield/Storm (ODS/S).

Methods

A survey was conducted in November and December 1991, nine to ten months after the Gulf War, with U.S. Army soldiers who had deployed to Southwest Asia from Germany and had served in frontline combat units. In all, 3,720 soldiers (Private to Staff Sergeant) and 544 leaders (Sergeant First Class to Lieutenant Colonel) agreed to complete the survey (at a 51% response rate in three brigade-size units). Participants were asked about their combat experiences and current levels of symptoms and adjustment.

Post Traumatic Stress (PTS) Symptoms

One focus of the survey was to assess the degree of current symptoms specifically related to ODS/S experiences. Stress response was measured by the Impact of Event Scale (Horowitz, Wilner, Kaltreider & Alvarez, 1979) and Brief Symptom Inventory (Derogatis & Spencer, 1982). Both instruments are frequently used to study reactions to traumatic events. People who have been exposed to a trauma, combat or otherwise, are at risk for developing a particular set of stress symptoms. These symptoms can include: 1) Intrusive recollections of the trauma, e.g., unwanted thoughts and dreams; 2) Avoiding memories of the trauma, e.g., thought avoidance and emotional detachment; and 3) Increased agitation or arousal, e.g., irritability, insomnia and hypervigilance. When these symptoms last for over a month, the person may be experiencing Post Traumatic Stress Disorder (PTSD) (American Psychiatric Association, 1987). Respondents in this study were **not** assessed for PTSD, but they were asked about symptoms typically associated with the disorder.

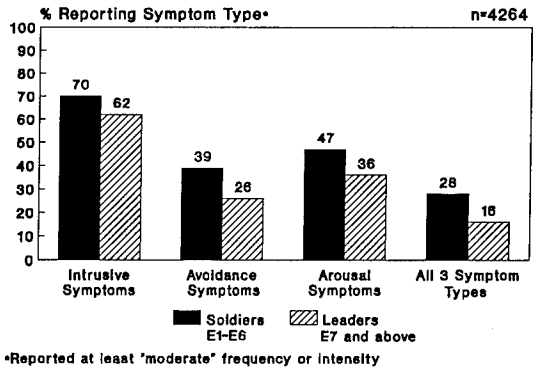
Results

The majority of respondents report some PTS-related symptoms over the previous week. However, respondents were categorized as experiencing one of the three symptom types listed above only if they reported at least a moderate degree of frequency or intensity of the minimum number of related symptoms as specified in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IIIR). Thus, of the 4,264 soldiers and leaders surveyed, 69% report at least one intrusive symptom, 37% report

at least three avoidance symptoms, and 46% report at least two arousal symptoms. All three types of stress symptoms at the indicated levels were acknowledged by 26% of the respondents. Of this PTSD risk group, 81% reported exposure to casualties.

Other results include the following: **Soldiers and leaders who reported being exposed to dead or wounded casualties are more likely to report PTS symptoms** than those who were not exposed. In addition, exposure to U.S. casualties was associated with the highest percentage reporting all three PTS symptoms types (32%), followed by exposure to civilian and Iraqi casualties (26%), and no exposure to casualties (18%). **Soldiers are more likely to report PTS symptoms than leaders,** regardless of type of combat experience **(Figure).** Among soldiers who report exposure to casualties, those **soldiers who report greater cohesion in their current units show fewer avoidance symptoms** than soldiers who felt little cohesion in their present units. Strong cohesion with fellow soldiers and perceived support from unit leadership are both associated with fewer reported symptoms.

Post-Traumatic Stress (PTS) Symptom Types by Rank



Concluding Remarks

It is important to remember that although a particular deployment has ended, the after-effects of the stress may linger for a significant number of soldiers and leaders. These after-effects may express themselves in a number of ways, through intrusive memories, emotional detachment, or increased arousal. Soldiers of all ranks, especially leaders, should be aware that PTS symptoms are common following a wartime deployment, and that the symptoms can be an indication of a PTS reaction. In this study, a majority of respondents had sometimes or often experienced symptoms of intrusion, while about 26% had experienced all three symptom types which would put them at risk for PTSD, as defined by the DSM-IIIR (American Psychiatric Association, 1987). Results from this study also suggest that unit support is associated with better adjustment even many months after a traumatic event. Thus, unit support has the potential to act as a force in preventing or mitigating stress symptoms. However, the relationship between unit cohesion and PTS symptoms needs clarification through further analysis of these and other data.

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Source: *WRAIR Post Combat Stress Survey, November, 1991.* Principal Investigators: Marlowe, D.H, Wright, K.M., Gifford, R.K., Bartone, P.T., Martin, J.A., & Vaitkus, M.A.

References: American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., rev. ed.). Washington, D.C.; Derogatis, L., & Spencer, P. (1982). *The Brief Symptom Inventory (BSI) administration, scoring & procedures manual I.* Baltimore: John Hopkins University, Clinical Psychometrics Research Unit; Horowitz, M., Wilner, N., Kaltreider, N. & Alvarez, W. (1980). Signs and symptoms of posttraumatic stress disorder. *Archives of General Psychiatry, 37,* 85-92.